1.0 INTRODUCTION

1.1 History and Background

The Federal Highway Administration (FHWA), Central Federal Lands Highway Division (CFLHD), in cooperation with the U.S. Department of Agriculture Forest Service (USDAFS), the California Department of Transportation (Caltrans), and the County of Riverside, is developing a project to improve a 13.2-kilometer (km) (8.2-mile [mi]) unpaved segment of California Forest Highway (FH) 224 (Bautista Canyon Road) in unincorporated Riverside County, California.

Bautista Canyon Road is 34.9 km (21.7 mi) in total length and was originally constructed in the 1940s as a link between the community of Valle Vista, located at the northern terminus, and the community of Anza, located just east of the southern terminus at State Highway (SH) 371. The southern segment of the roadway, from SH 371 north 3.2 km (2 mi), was paved in 1977. The segment's northernmost 16.3 km (10.3 mi) was paved in 1987. In 1988, an additional 1.9 km (1.2 mi) segment near the southern terminus was paved (see Figures 1.3-1 and 1.3-2, Section 1.3.1). Bautista Canyon Road currently provides access to a portion of the San Bernardino National Forest (SBNF). In addition to its use as a public transportation corridor, Bautista Canyon Road is used by SBNF staff for administrative and maintenance purposes.

The unpaved 13.2 km (8.2 mi) section currently contains many design and operational deficiencies that compromise safe and efficient use of the road and prevents completion of the transportation system link between Valle Vista and Anza. Additionally, the road passes through the Bautista Creek bed and crosses numerous other drainages. This can render the road impassible during high flow events. Further, the road surface is rough and washboarded, and requires regular maintenance. These and other factors contributed to a determination by the County of Riverside and the USDAFS that the roadway be reconstructed to current design standards to provide a safe and reliable route of travel and improved access to the SBNF. Consequently, the County of Riverside and the USDAFS proposed this improvement be programmed and funded through the FH portion of the Federal Lands Highway Program (FLHP).

The FH portion of the FLHP allocates funding for transportation projects which provide access to, within, or adjacent to national forests and that also serve as a link in a state or local highway system. The program is administered separately in each state by a three-agency cooperative consisting of the FHWA, the USDAFS, and the State Department of Transportation (DOT). These agencies, referred to as "Program Agencies," maintain the FH program. Responsibilities include recommending and making decisions concerning improvement projects in each state.

The Program Agencies for the Bautista Canyon Road project are the USDAFS, Caltrans, and the FHWA. The FHWA is the lead federal agency for this project and is responsible for the planning, design, and construction of project improvements. The County of Riverside maintains the road via an easement from the USDAFS, SBNF, and would continue to maintain the road after proposed improvements are made. Thus, the County of Riverside is the local lead agency.

During the 9 November 1993 California program meeting, the Program Agencies recommended that reconnaissance and scoping be completed for the proposed project. A reconnaissance and scoping report was prepared in 1994 as a guide for future programming decisions. As a result, proposed improvements to the 13.2 km (8.2 mi) segment of Bautista Canyon Road were placed into the program for funding in Fiscal Year 2005. The purpose of the reconnaissance and scoping report was to aid in the identification of the following:

- existing highway conditions
- purpose and need for improvement
- recommended level of improvement
- limits of the proposed action
- viability of the proposed action

In December 2000, a Social, Economic, and Environmental (SEE) Study Team was established to begin project coordination and development. The SEE Team is comprised of representatives from the FHWA, the USDAFS, and County of Riverside. The function of the SEE Team is to guide the proposal through the project development process and provide a point of contact within each agency through which necessary technical disciplines and individuals may be accessed. The SEE Team initiated public and interagency project scoping, environmental surveys of the project area, and development of a joint Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) and related technical documents required to demonstrate compliance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and applicable environmental regulations.

It is important to note that although the subject study area is defined as the 13.2 km (8.2 mi) unpaved segment of Bautista Canyon Road, the project limits (logical termini) extend the entire length of the roadway from Valle Vista to Anza (Figure 1.3-1). The logical termini were defined consistent with the FHWA memorandum *Guidance on the Development of Project Termini,* 5 November 1993. Logical termini are defined as the rational endpoints for transportation improvement and review of environmental impacts. Using the logical termini approach, environmental review considers potential effects over a broader geographic range rather than focusing only on the specific area of improvement. No roadway improvements are proposed for segments north or south of the study area; however, related project elements and effects, as described in Chapters 2 and 3, could impact resources within the project limits. Thus, for the purpose of this environmental analysis, existing conditions and impacts are discussed for both the study area and, where appropriate, throughout the Bautista Canyon Road corridor.

1.2 Intended Use of the EIS/EIR

NEPA was enacted on 1 January 1970 in response to public demand for environmental protection at the national level. NEPA is the nation's charter for protection of the environment and "contains 'action-forcing' procedures to ensure that federal agency decision-makers take environmental factors into account" (40 Code of Federal Regulations [CFR] § 1500.1). NEPA procedures ensure that environmental information is available to agency officials and citizens

before decisions are made and before actions are taken. NEPA accomplishes this through the requirement for federal agencies to prepare an EIS and conduct public involvement when they propose a major federal action that could significantly affect the human environment.

Like NEPA, the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 *et seq.*) requires an Environmental Impact Report (EIR) be prepared to assess the environmental characteristics of an area, determine what effects would result if the area is altered or disturbed by a proposed action, and identify alternatives or other measures to avoid or reduce those effects. State of California environmental review regulations required per CEQA have led to the preparation of a joint EIS/EIR to satisfy both state and federal requirements.

The Bautista Canyon Road Project EIS/EIR is intended to provide local, state, and federal decision-making and reviewing agencies, and the public, with an analysis of potential environmental effects associated with reconstructing the 13.2 km (8.2 mi) unpaved segment of Bautista Canyon Road. Project effects are disclosed in this document, which has been circulated for public review and comment as part of the environmental review process. In addition, public input obtained through a public scoping process has been incorporated into the document.

1.2.1 Lead Agencies

1.2.1.1 Federal Highway Administration

The Central Federal Lands Highway Division of the FHWA is responsible for administering FLHP funds and, as noted, has assumed the role of lead federal agency for the preparation of this EIS/EIR. To administer the FLHP, the FHWA is providing transportation-engineering services for the planning and preliminary design of the project. Selecting the preferred improvement alternative and implementing the project will require a federal action, which will be documented in a Record of Decision (ROD) prepared by the FHWA. A ROD is a written public record explaining why the federal agency has selected a particular course of action and what measures will be implemented to avoid or minimize environmental effects.

The FLHP has programmed funds in Fiscal Year 2005 to improve Bautista Canyon Road. The FHWA would complete the final design and oversee construction, while the FLHP would provide $10 million and fund FHWA oversight. The County of Riverside would be responsible for the construction-funding shortfall from the FLHP-programmed amount, which is now estimated to be $2 million.

1.2.1.2 County of Riverside

State of California environmental review regulations required per CEQA have led to the preparation of a joint EIS/EIR to satisfy both state and federal requirements. As noted in Section 1.2 of this document, like NEPA, CEQA requires an environmental document (i.e., EIR) be prepared to assess the environmental characteristics of an area, determine what effects would result if the area is altered or disturbed by a proposed action, and identify alternatives or other measures to avoid or reduce those effects. Because the County of Riverside is responsible for acquiring right-of-way, relocating utilities, and will continue to be responsible for

maintaining the roadway, the County is serving as the CEQA lead agency for the project. The proposed action will require project approval and Final EIR certification by the County of Riverside Board of Supervisors.

1.2.2 Cooperating and Responsible Agencies

NEPA regulations require the lead federal agency request other agencies having special interest or expertise to become cooperating agencies. Additionally, agencies with jurisdiction by law must be requested to become cooperating agencies. The USDAFS and County of Riverside responded affirmatively to FHWA's request and are both considered cooperating agencies under NEPA.

1.2.2.1 U.S. Department of Agriculture Forest Service

Bautista Canyon Road (FH 224) is located in the southwestern portion of the SBNF within the Bautista Management Unit (BMU) of the Soboba Management Area, one of 15 management areas within the SBNF (USDAFS 1989) (see Figure 3.1-1). Management areas were established to aid the USDAFS in implementing the SBNF Land and Resource Management Plan for the forest. The plan was developed to help the USDAFS manage facilities, resources, and activities within the SBNF. As noted, the USDAFS is the major landowner along Bautista Canyon Road. Approximately 16 km (10 mi) of Bautista Canyon Road are within the SBNF. This includes approximately 11.6 km (7.2 mi) of the 13.2 km (8.2 mi) unpaved segment. In 1985, the USDAFS granted the County of Riverside a USDA easement for Bautista Canyon Road to cross USDAFS lands. As noted, a condition of this easement requires the County of Riverside be responsible for maintaining the roadway.

As a cooperating agency with the FHWA and County of Riverside, the USDAFS participated in the document preparation process to ensure their interests were considered during project development. In addition, the USDAFS will be reviewing the proposed action for consistency with the regulations, policies, and guidelines of the SBNF Land and Resource Management Plan.

1.2.3 Permits and Approvals Required

The EIS/EIR document must include a list of related environmental review and consultation requirements, permits, licenses, and other approvals required by federal, state, or local laws, regulations, or policies. Various approvals and permits would be required to implement the proposed action. Table 1.2-1 lists the required permits and approvals. Agencies to which such permit applications are submitted may use the information presented in this EIS/EIR to assist in the application review and decision-making process.

Table 1.2-1
Key Approvals and Permits

Project Authority/ Requiring Authorization	Authorizing Agency	Authority	Permit/Approval
Discharge of Fill Material into "Waters of U.S."	U.S. Army Corps of Engineers (USACE)	Clean Water Act; Section 10 of the Rivers and Harbors Act	Section 404 Permit
Discharge of Pollutants into "Waters of U.S."	Santa Ana Regional Water Quality Control Board (SARWQCB)	Clean Water Act; Sections 401 and 402	Water Quality Certification and National Pollution Discharge Elimination System (NPDES) permit
Effects to Threatened or Endangered Species	U.S. Fish and Wildlife Service (USFWS)	Federal Endangered Species Act	Biological Opinion (BO)
Effects to Historic Properties	California State Historic Preservation Officer (SHPO)	Section 106 of the National Historic Preservation Act	Review by SHPO
Unlawful Taking of Migratory Birds	USFWS	Migratory Bird Treaty Act	A depredation permit may be required
Lake or Streambed Alteration Program	California Department of Fish and Game (CDFG)	Fish and Game Code, Section 1600 Protection and Conservation of Fish and Wildlife Resources	Section 1601 agreement
Relocation of Utility Poles	U.S. Department of Agriculture-Forest Service (USDAFS)	Existing Special Use Permit	Modify existing Special Use Permit

1.2.4 Public Involvement Process

On 12 January 2001, the FHWA published a notice of intent (NOI) in the *Federal Register* advising the public that an EIS would be prepared for the proposed project. To satisfy CEQA requirements, a scoping letter and notice of preparation (NOP) was sent by the County of Riverside on 25 January 2001 to reviewing and responsible agencies, community groups, private citizens, and special interest groups. The NOI, NOP and mailing list is provided in Volume II, Appendix A of this document. Public scoping meetings were held on 30 and 31 January 2001 in Anza and Hemet. The scoping meetings were intended to solicit public comments and help ensure that a full range of issues and alternatives were considered in project development.

A number of letters and comments were received during project scoping. These letters are provided in Volume II, Appendix B of this document. All comments received to date, verbal and written, have been considered in preparing this Draft EIS/EIR. The issues identified through this process requiring detailed study include:

- Biological Resources, Section 3.6
- Cultural Resources, Section 3.8
- Traffic Circulation, Section 3.3
- Visual Resources, Section 3.10
- Drainage/Water Quality, Section 3.7
- Noise, Section 3.5
- Air Quality, Section 3.4
- Recreation, Section 3.11
- Cumulative Effects, Chapter 5
- Growth Inducement, Chapter 6
- Public Health & Safety, Sections 3.7, 3.9, and 3.14

In December 2000, the SEE Team initiated interagency coordination for the project by holding resource-specific scoping meetings with the U.S. Army Corps of Engineers (USACE), California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), and Santa Ana Regional Water Quality Control Board (SARWQCB). Additional meetings were held as necessary throughout project development and are summarized in Table 1.2-2. In April 2001, the SEE Team held a cultural resource scoping meeting with the National Park Service (NPS), Ramona Band of the Cahuilla Indians, and the Soboba Tribe. Later cultural resource meetings included representatives from the Santa Rosa Reservation, Cahuilla Reservation, and Southern California Indian Basketweavers Organization. Issues raised included concerns regarding sensitive biological and cultural resources and past and ongoing use of the canyon by Native Americans.

Table 1.2-2
SEE Team and Interagency Meetings

Date	Issue Areas	Agency/Interest Group Coordination
December, 2000	Scoping Meeting	USACE, CDFG, USFWS, SARWQCB
April 16, 2001	Scoping Meeting	NPS, Ramona Band of Cahuilla Indians, Soboba Tribe
9 March 2002	Biological and cultural resources	Ramona Band of Cahuilla Indians, Cahuilla Band of Mission Indians, Pechanga Band of Mission Indians, Southern California Indian Basketweavers Organization, Traditional Practitioners, and Santa Rosa representatives
8 May 2002	Utility coordination and biological resources	Anza Electric Cooperative and SBNF
17 July 2002	Utility coordination	Verizon and Anza Electric Cooperative
18 July 2002	Revegetation and aesthetic treatments	SBNF and NPS
3 August 2002	Archaeological and ethnobotanical resources	SBNF, NPS, Santa Rosa representatives, and Cahuilla Band of Mission Indians
16 December 2002	Project field review	SBNF, SRI, Ramona Band of Cahuilla Indians
22 November 2003	Archaeological and ethnobotanical resources	SBNF, Pala, Soboba, Ramona, Santa Rosa representatives, and Cahuilla Band of Mission Indians
2 March 2004	Biological resources	SBNF and USFWS

1.3 Project Location and Setting

1.3.1 Project Location

As noted, Bautista Canyon Road is approximately 34.9 km (21.7 mi) in length and is located between SH 74 and SH 371 (Figures 1.3-1 and 1.3-2) in unincorporated Riverside County. The road is designated as Riverside County Road S5019 (FH 224) and traverses generally from the northwest to the southeast through a portion of the SBNF. The road's functional classification is "rural collector".

1.3.2 Regional Setting

Bautista Canyon Road is located in the central portion of Riverside County, California, approximately 64 km (40 mi) southeast of Los Angeles, within the southern portion of the SBNF and just west of the San Jacinto Mountains. As noted, Bautista Canyon Road traverses through a portion of the BMU within the SBNF. The BMU is bordered on the south and west by Bureau of Land Management (BLM) lands, and on the north and east by Rouse Ridge. The Alessandro and Hixon off-highway vehicle (OHV) trails are located within the project area (Figure 1.3-2). Other types of dispersed recreation (e.g., hiking) also occur in the vicinity. The California Department of Corrections Bautista Conservation Camp, a minimum-security prison facility, is located west of the roadway at the northern terminus of the study area. The USDAFS Tripp Flats Forest Service Station is located approximately 0.8 km (0.5 mi) west of the roadway, approximately 3.7 km (2.3 mi) from the southern terminus of the study area, and is accessed via Tripp Flats Road from Bautista Canyon Road. The Red Mountain Lookout is located on the western boundary of the management area approximately 3.2 km (2 mi) west of the roadway. It is accessed via the Hixon Trail off of Bautista Canyon Road at approximately 3.2 km (2 mi) north of the northern terminus of the project limits (Figure 1-3.2) (USDAFS 1988).

1.4 Purpose and Need

This section identifies and describes the purpose of and need for the proposed action. The purpose and need for the project is based on the condition of the existing roadway, which prevents it from functioning as an efficient link in the Riverside County transportation system. Additionally, the currently unpaved segment of Bautista Canyon Road contains many operational deficiencies that require considerable maintenance and impede reliable and safe use. These issues are further expanded in the following sections.

1.4.1 County of Riverside General Plan, Riverside Extended Mountain Area Plan

The County of Riverside provides guidelines, standards, and policies for future development in the *Riverside County General* Plan (revised April 2002; Public Hearing Draft). The Circulation Element of the plan identifies the transportation circulation network necessary to link all planned facilities and land activities. The plan also provides a framework for creating local area plans based on the input of local citizens and County planning staff. Using this framework, the Riverside Extended Mountain Area Plan (REMAP) was created. The REMAP was developed to address planning issues unique to an 850-square mile portion of rural Riverside County. Bautista Canyon Road is classified as "mountain arterial" in the REMAP and is intended to

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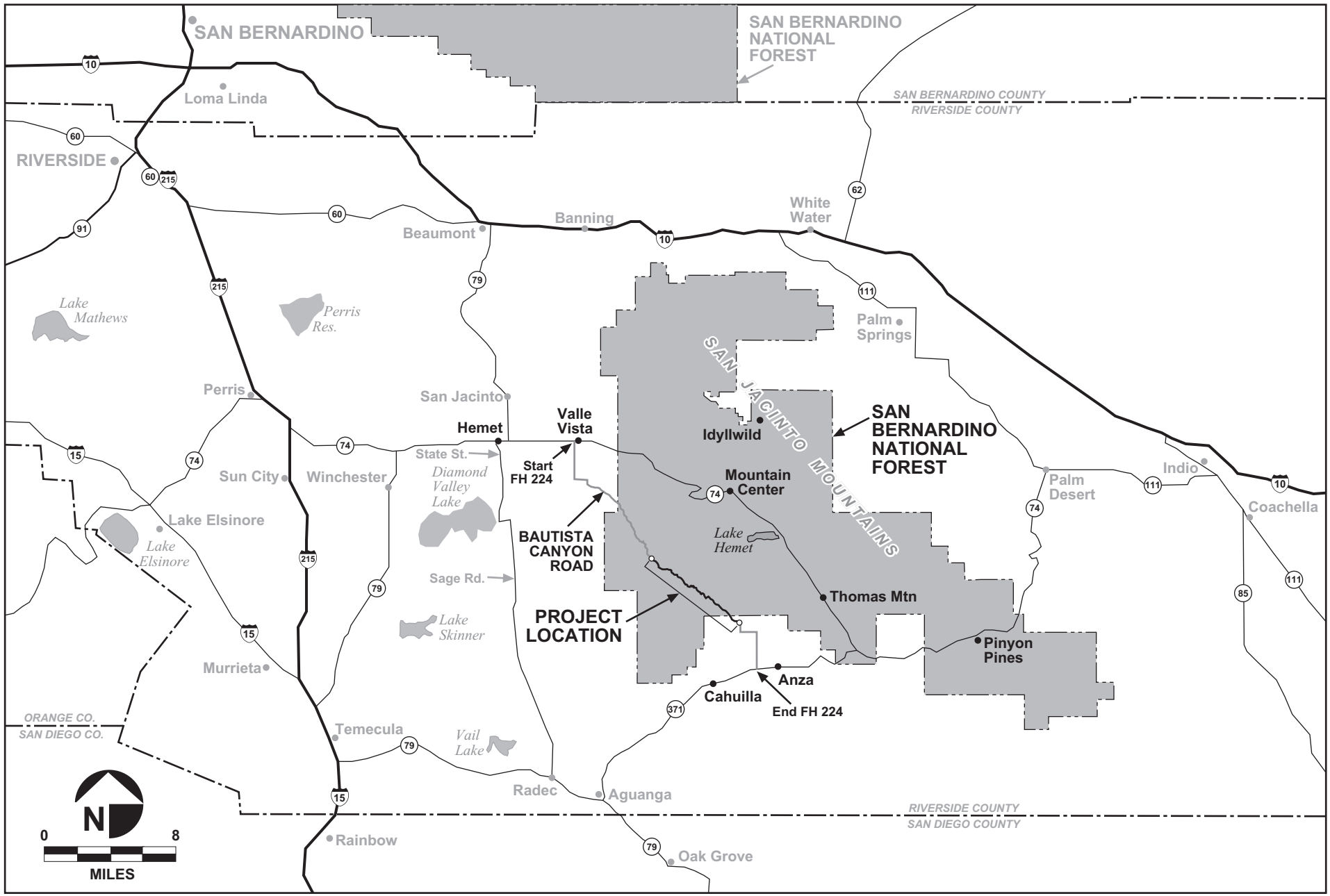

Regional Map

FIGURE

1.3-1

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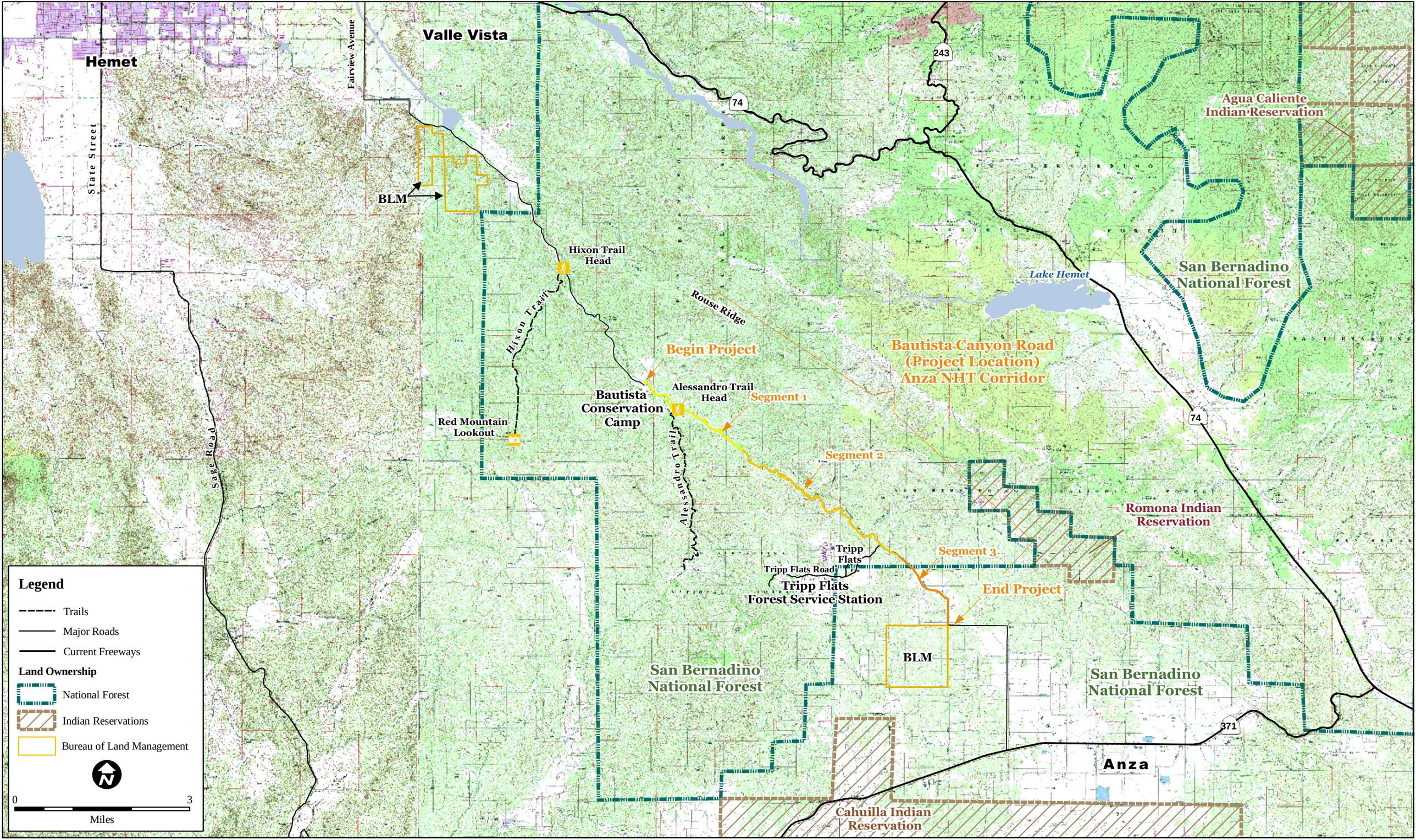

Project Location Map

FIGURE 1.3-2

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serve as a roadway providing intra- and inter-community travel and access to the regional highway and freeway system. The recommended network and circulation classifications are based on the 2020 build-out of planned land use in the 2002 REMAP.

1.4.2 Southern California Association of Governments, Regional Transportation Plan

The Southern California Association of Governments (SCAG) is the regional planning agency responsible for transportation planning and investment decisions for six southern California counties, including the County of Riverside. SCAG's responsibilities include developing a coordinated and cohesive long-range transportation plan that addresses the needs of the greater Los Angeles metropolitan area. SCAG's 2001 Regional Transportation Plan (RTP) provides an assessment of the overall growth and economic trends in the planning region from 2001 to 2025 and identifies key highway and arterial improvement projects necessary to meet the region's projected growth (SCAG 2002).

The SCAG Regional Transportation Improvement Program (RTIP) is a multiyear, multimodal program containing regional transportation improvements for highway, transit and aviation. The RTIP consists of fully funded projects drawn from the RTP. As noted in Section 1.2.1, the FLHP and Riverside County will fund the project. As part of SCAG's assessment process, it was determined that the proposed project is necessary to complete a segment of the regional transportation network. Thus, the proposed project is included in the SCAG RTIP.

1.4.3 Existing Roadway Deficiencies

The existing Bautista Canyon Road was constructed in the 1940s as a link between the communities of Valle Vista to the north and Anza to the south. It no longer adequately serves that function because the current alignment and geometry was not designed for modern vehicular travel. Roadway geometry (roadway crown, superelevation, etc.) is deficient and contains many abrupt, sharp, and inconsistent horizontal curves that limit sight distance. Additionally, the roadway closely follows terrain irregularities, which creates many steep grades and abrupt summits.

The 13.2 km (8.2 mile) unpaved segment is very narrow and is difficult in many places for vehicles traveling in opposite directions to safely pass. The unpaved surface is native soil (decomposed granite) and is in fair to poor condition. The road surface is typically very rough. Vehicles traveling on the roadway generate dust, particularly during dry, windy conditions. This adversely affects air quality and can impair visibility, which further compromises user safety (FHWA 1994).

In its current conditions, the roadway passes through Bautista Creek and several of its tributaries rather than crossing over them on structures. The main creek crossing is hazardous when water is flowing and impassable during severe storm events. These conditions can require temporary road closures. Storm water runoff often flows in the bed of the road increasing the potential for washouts and rockfalls in areas of cut and fill. Further, storm water erodes the road surface and contributes to sedimentation and the deposition of debris in waterways (FHWA 2002).

1.4.4 System Linkage and Roadway Operation

The current deficiencies described above deter motorists from using Bautista Canyon Road as a link in the County of Riverside transportation system. Table 1.4-1 compares the existing travel times (as a relationship of distance and speed) between Hemet (Valle Vista) and Anza via Bautista Canyon Road and two alternate routes. As shown, Bautista Canyon Road has notably lower travel speeds. The lower speeds caused by deficiencies in the roadway make either SH 74 or State Street/Sage Road a more efficient route of travel between the Hemet/Valle Vista area and Anza (Figures 1.3-1 and 1.3-2).

Table 1.4-1
Travel Distance and Time from Downtown Hemet to Anza Community Center

Route	Distance (km/mi)	Average Speed (kph/mph)	Travel Time
SH 74 to SH 371 (not via Bautista Canyon Road)	58.9 (36.6)	53.4 (33.2)	47 minutes
SH 74/State Street/Sage Road/ SH 79/SH 371	65.3 (40.6)	54.1 (33.6)	56 minutes
SH 74/Bautista Canyon Road/ SH 371	43.5 (27.0)	31.7 (19.7)*	49 minutes

Source: County of Riverside, Department of Transportation

km – Kilometer
km/h – kilometers per hour
mi – mile
mph – miles per hour
SH – State Highway
*Assumes 10-miles per hour on 13.2 km (8.2 mi) dirt segment

Table 1.4-2 shows the existing average daily traffic (ADT) volumes, projected ADT on Bautista Canyon Road for opening year (i.e., 2006) and design year (i.e., 2025), as well as projected 2025 ADT if the project is not built. If the project is constructed, a portion of the traffic volumes would be diversions from SH 371/SH 74; however, total volumes on Bautista Canyon Road are projected to increase in response to population growth in Riverside County. This is described in more detail in Sections 3.2 and 3.3 of this document.

Table 1.4-2
Traffic Volume Projections

Segment	Existing ADT	No Build 2025 ADT	Opening Year ADT*	Build 2025 ADT	Mountain Arterial % Capacity* (Existing ADT)
East of Fairview Avenue (north)	346	779	600	1,790	3.5%
Bautista Conservation Camp (central)	138	311	400	1,320	1.4%
South of Tripp Flats Road (south)	61	137	300	1,150	0.6%

UCI, 2002
* - Based on minimum of 10,000 daily trips

Table 1.4-2 also shows the percentage of capacity for existing operating conditions based on the minimum number of daily trips for mountain arterials (10,000). This data is provided to illustrate that the roadway fails to function in the system because of existing roadway deficiencies. In order to complete a regional transportation/circulation link as defined in the REMAP and RTIP, the roadway would have to be improved to current design standards. This is based on the need to safely accommodate the existing and projected increase in traffic volumes on Bautista Canyon Road and provide a more efficient route for motorists traveling between Valle Vista and Anza.

1.4.5 Maintenance

Riverside County maintenance crews currently grade Bautista Canyon Road three times each year. Vehicle use quickly degrades the unpaved segment. The degradation is exacerbated during and after storm events when vehicles travel on the wet road surface. In addition to maintaining the roadway surface, County personnel regularly cut channels to drain surface water and clear sediments deposited by storm runoff.

Traffic volumes are expected to increase with regional growth. If the project is not implemented, increased use of the roadway would more rapidly degrade the surface, thus, requiring more frequent maintenance and increase overall costs. Reconstruction to current design standards would reduce or eliminate much of the ongoing maintenance requirements.

1.4.6 SBNF Access for Emergency/Fire Response and Administration

Bautista Canyon Road provides access to over 40,000 acres of national forest, state, Indian Reservation, and private lands. It provides access to the southern portion of the Ramona Indian Reservation and is the primary route of vehicular access to this portion of the SBNF for administrative patrols and emergency response. SBNF staff access the forest for a variety of purposes including law enforcement, fire patrols, wildlife and habitat management; to access other roads, and to monitor recreational users. Bautista Canyon Road also serves as a potential escape route for Anza residents in case of wildfire.

The SBNF performs weekly law enforcement patrols, which involve monitoring the canyon for signs of illegal dumping, enforcing use of Adventure Pass permits, and generally overseeing recreational and other activities occurring within the canyon. SBNF indicates that prior to paving the northern segment of Bautista Canyon Road, there was significant off road vehicle use in the canyon, as well as illegal dumping of trash and abandoned vehicles. Since the northern portion of the roadway was paved, off road vehicle travel and illegal dumping along that road segment has been minimal. There is currently significant illegal dumping along the unpaved section of Bautista Canyon Road and the SBNF believes implementation of the proposed project would result in a similar reduction in off road vehicle use and illegal dumping. Vehicle wear and tear caused by the existing road surface has been cited by SBNF as a deterrent to performing more routine patrols in Bautista Canyon. In addition to law enforcement and emergency response, Bautista Canyon Road is used to access the canyon by SBNF staff to perform biological surveys required to manage listed species of plants and animals; maintain recreational trails, and perform routine fire patrols.

The California Department of Fish & Game also patrols the canyon during hunting season primarily to monitor hunters for compliance with license requirements. Proposed improvements would also allow for increased law enforcement patrols by USDAFS Law Enforcement Officers, USDAFS Fire Prevention Technicians, and Riverside County Sheriff Department officers. In the event of fire or other emergency, the SBNF has one fire engine co-located in Anza with the California Department of Forestry (CDF). This engine and other emergency response units access the canyon via Bautista Canyon Road. CDF fire fighters located at the Conservation Camp also use Bautista Canyon Road to access the canyon for fire response. Implementation of the proposed project would improve the response times for initial attack on wildfires occurring within the canyon. The greatest benefit would be associated with paving the road surface; however, alignment changes would also contribute to more rapid emergency response. Improvements to Bautista Canyon Road would reduce the response time for emergency calls within the canyon for Valle Vista Fire Station from the north and Anza Fire Station from the south.

1.4.7 Safety

A review of collision history for the existing unpaved segment of Bautista Canyon Road (from just south of the Conservation Camp to the paved portion of Bautista Canyon Road in Anza) shows that there were a total of 19 reported accidents in the ten-year period from 1 November 1994, to 31 October 2003. Of the 19 accidents, 2 involved fatalities, 6 involved injuries, and 11 resulted in only property damage. Of the 19 collisions, 8 collisions (42 percent) involved fatalities or injuries. Based on the length of the unimproved segment, and an average daily traffic (ADT) volume of 61 vehicles (UCI 2002), the collision rate is 10.4 accidents per million vehicle miles (MVM). The collision data are summarized in Table 1.4-3.

For comparison purposes, a 1987 study by the FHWA, which evaluated data from seven states, found that the average total accident rate (accidents per MVM) was 2.9 for rural two-lane highways with an ADT of less than 400, and 2.3 for an ADT greater than 1000 but less than 2000 (FHWA 1987).

Table 1.4-3
Collisions on Bautista Canyon Road †

Study Period*	Length (miles)	No. of Collisions				Traffic Volumes** (vehicles/day)	Collision Rate*** (acc/mvm)
		Fatal	Injury	PDO	Total		
10 years	8.2	2	6	11	19	61	10.4

÷ The unpaved segment from approximately south of the Conservation Camp to a point just north of the paved portion of Bautista Road in Anza.

* Study Period: Nov. 1, 1994 to Oct. 31, 2003 (10 years)
** Baseline traffic volume per Table 3.3-1 of DEIS.
*** Collision Rate = $\frac{\text{Number of collisions} \times 10^6}{\text{ADT (veh/day)} \times \text{Period of time in which collisions occurred (days)} \times \text{Length of road segment (miles)}}$ = acc/mvm

The Zegeer crash prediction model (FHWA 1987) for 2-lane highway was used to predict the crash rate for Bautista Canyon Road in the design year (2025). A crash rate of 4.6 per MVM was computed for the existing conditions using this model. Comparing the computed rate with the actual crash rate of 10.4 indicates that the existing conditions are worse than the modeled conditions. The discrepancy between the model and existing conditions is most likely due to the widely varying conditions of the existing roadway (widths, sight distances, speeds, etc.) that cannot be replicated in the model but that will be addressed with the proposed design. Based on the Zegeer model, if Bautista Canyon Road was not improved, the crash rate in the year 2025 [based on an ADT of 138 (UCI 2002)] would be 4.5 per MVM.

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